

REMARKS

This is a response to the non-final Office Action mailed on January 14, 2009 in the above-identified matter.

Specification

The Title of the application is amended to correct a misspelling which appears in the USPTO's PAIR records.

Claims

Claims 1, 2, 4, 8, 9, 12 and 15 are amended, claims 17-21 are withdrawn, claims 3, 6, 7, 10 and 11 are cancelled, and claims 22-25 are new. No new matter is entered. Example support for the claims is as follows: claim 1 (p.4, lines 25-27, p.5, lines 26-28, Fig. 4, and original claims 2 and 3), claim 2 (p.5, lines 26-28), claim 4 (p.1, lines 5-7 and 13-15; p.6, lines 19 and 20), claim 8 (Fig. 3, NICs 33, p.5, lines 9-14), claim 9 (amended for consistency with claim 8), claims 12 and 24 (p.1, lines 5-7; p.6, lines 20-22), claim 15 (p.5, lines 23-25, Fig. 4), claim 22 (p.5, lines 26-28), and claims 23 and 25 (p.5, line 28-p.6, line 2).

Paragraph 8 of the Office Action

Claims 1-3, 6, 7 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Laborde (5,303,287) in view of Reed (5,634,206). Applicants respectfully traverse the rejections.

Claim 1 sets forth that one or more controllers at a central site comprise a selection system which carries out both macro- and micro-diversity selection. Further, a switch system connects receive signals from each of multiple receive antennas at each cell site to the selection system.

Laborde provides a system in which a PCN hub 30 communicates via a PCN distribution network 40 with radio ports 34 (Fig. 2, col. 5, lines 44-51). Laborde does not expressly disclose the use of macro- and micro-diversity selection as claimed, as acknowledged by the Office Action at p.4. Reed is cited as showing macro-diversity based on handoff between cells and micro-diversity based on selection of one of two receive antennas 110 and 115 (Fig. 3). However, only one of the two antennas is selected at a given time by a switch 120.

Accordingly, the receive signals from each of the multiple receive antennas of each cell site are not connected to a selection system as claimed, so that macro- and micro-diversity selection are performed *based on analysis, at the selection system at the central site, of the receive signals from each of the multiple receive antennas of each cell site*. The cited references, taken alone or in combination, do not disclose this feature.

Applicants' approach allows the macro- and micro-diversity selection to take place at a central site so that the amount of processing circuitry which is needed at the cell site is reduced. This advantage is more than a mere design choice and provides significant benefits. For example, as set forth in claim 22, the one or more controllers can be implemented in a network interface card (Applicants' Fig. 4), which connects to a server. This approach takes advantage of the resources of the server, which carries out a range of functions (specification, p.3, lines 1-5). It is not practical to have a server at each cell site. Further, a conventional server can be used by installing a network interface card with the appropriate circuitry to achieve a new functionality as described herein. The cited references do not provide this benefit.

Claims 1 and 22 are therefore clearly patentable.

Claim 2 emphasizes that the switch system presents all receive signals from the multiple receive antennas at each cell site to the selection system at the central site, to allow the selection system to perform the macro- and micro-diversity selection. In contrast, as mentioned, Reed only selects one of the receive signals, so does not allow a system which presents all receive signals as claimed.

Claim 2 is therefore clearly patentable.

Claims 6, 7 and 16 are similarly patentable at least by virtue of their dependence on claim 1.

Paragraph 9 of the Office Action

Claims 8-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Laborde in view of Hoshikuki (US 6,141,392).

Claim 8 sets forth the use of a server having first and second network interface cards. As mentioned, network interface cards can advantageously be used with a server, sharing its resources. Each network interface card comprises a MAC processor for analyzing packets according to a wireless LAN protocol. Those skilled in the art appreciate that the Medium

Access Control (MAC) layer is part of the data link layer of the OSI data communication model. Further, a wireless LAN is a local area network, which is an important infrastructure which allows mobility of wireless devices about a wide range of commercial and domestic premises (p.1, lines 10-13). A LAN may implement a range of wireless protocols such as IEEE 802.11a and 802.11b (p.1, lines 5-7). See claim 12.

Further, a first means uses a macro diversity technique to select one receive signal among multiple receive signals from a first cell site, and to select one receive signal among multiple receive signals from a second cell site. The one receive signal from the first cell site is provided to the first network interface card, and the one receive signal from the second cell site is provided to the second network interface card. Thus, different network interface cards of a server receive signals from different respective cell sites. This allows the processing to be tailored to each cell site, for instance. Laborde and Hoshikuki do not disclose or suggest such a network.

Claims 8 and 12 are therefore clearly patentable.

Claim 9 is similarly patentable at least by virtue of its dependence on claim 8.

Paragraph 10 of the Office Action

Claims 4, 5 and 13-15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Laborde in view of Reed in view of Toshimitsu (US 2001/0004604).

Regarding claim 4, Toshimitsu sets forth that a radio base station controller 20 and radio base stations 10n-1, 10n and 10n+1 are connected through wire lines to each other (par. 52). Further, one modulator may modulate a transmission signal to be transmitted to both the radio base stations 10n-1, 10n, or a dedicated modulator can be provided for each managed radio base station. However, there is no disclosure or suggestion that *different wireless terminals use different respective wireless LAN protocols*. For example, as set forth in Applicants' specification, different mobile devices may require service within a coverage volume using different wireless LAN protocols such as IEEE 802.11a and 802.11b (p.1, lines 5-7 and 13-15). The cited references do not disclose or suggest that one or more controllers include transceivers that transmit and receive RF signals according to different respective wireless LAN protocols that are used by different wireless terminals.

Claim 4 is therefore clearly patentable.

Claim 15 sets forth that a transmit signal of a transmit antenna shares at least part of a first optical fiber with a receive signal of a first receive antenna. For example, see Fig. 4 and p.5, lines 23-25 which states: "In this example, the outgoing signal to each POP shares an optical fibre 45 with one of the incoming signals from the POP, while a separate fibre 46 is provided for the other incoming signal." In contrast, Toshimitsu provides separate optical fibers for transmit and receive. For example, Fig. 3 of Toshimitsu provides a transmit system using optical fibers 42a,b,c,d and Fig. 4 of Toshimitsu provides a receive system using optical fibers 58a,b,c,d. Applicants' approach avoids the need for an additional separate dedicated fiber between the optoelectronic port 26 and a transmit or receive antenna (Applicants' Fig. 4).

Claim 15 is therefore clearly patentable.

Claims 5, 13 and 14 are similarly patentable at least by virtue of their dependence on claim 1.

New claims

Regarding claim 22, the advantages of a network interface card have been discussed. The advantages include the ability to share resources with a server and the ability to connect to an existing server to add a new functionality. The cited references do not provide this feature.

Regarding claim 23, a MAC processor in a network interface card is used to analyze packets received from each cell site according to a wireless LAN protocol. This allows the data link layer of the OSI data communication model to be implemented. The cited references do not provide this feature. A specific wireless LAN protocol is IEEE 802.11 (claim 24).

Claim 25 sets forth that a network interface card further comprises one or more controllers, a baseband modem for conversion of digital signals to and from quadrature form, a stage for modulation and demodulation of quadrature signals, and an input/output port for connection to a server. Thus, a number of functions can be provided in a network interface card which can be connected to a server. The cited references do not provide these features.

Conclusion

In view of the above, each of the presently pending claims is believed to be in condition for immediate allowance. The Examiner is therefore requested to pass this application on to an

early issue. Should further questions remain, the Examiner is invited to contact the undersigned attorney by telephone.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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